

**Summary Minutes of the  
U.S. Environmental Protection Agency (EPA)  
Clean Air Scientific Advisory Committee  
Air Monitoring and Methods Subcommittee (AMMS) Review of EPA's Photochemical  
Assessment Monitoring Stations (PAMS) Program  
Public Teleconference**

Date and Time: Monday, July 18, 2011, 12:30 P.M. – 4:00 P.M. ET

Location: Teleconference Only

Purpose: The purpose of the July 18, 2011 teleconference call was for the EPA Clean Air Scientific Advisory Committee Air Monitoring and Methods Subcommittee (AMMS) to discuss the AMMS draft report on EPA's draft plans for Photochemical Assessment Monitoring Stations (PAMS) Network Re-engineering.

Participants:

AMMS: CASAC Air Monitoring and Methods Subcommittee (See Roster, Attachment A):

Mr. George A. Allen, Chair  
Dr. David T. Allen  
Dr. Linda Bonanno  
Dr. Doug Burns  
Dr. Judith Chow  
Dr. Kenneth Demerjian  
Mr. Eric Edgerton  
Mr. Henry (Dirk) Felton  
Dr. Philip Fine  
Dr. Philip Hopke  
Dr. Rudolf Husar  
Dr. Daniel Jacob  
Dr. Peter H. McMurry  
Dr. Allen Robinson  
Dr. Armistead (Ted) Russell  
Dr. James Jay Schauer  
Dr. Jay Turner  
Dr. Yousheng Zeng

Drs. Daniel Jacob, Allen Robinson and Yousheng Zeng could not participate during the July 18, 2011 teleconference call.

EPA SAB Staff: Mr. Edward Hanlon, Designated Federal Officer

EPA Staff: Mr. Kevin Cavender, EPA Office of Air Quality Planning  
and Standards

Other Attendees: A list of members of the public who participated or requested information for calling into the teleconference is provided in Attachment B, Public Attendance.

Materials Available: The agenda and teleconference materials were circulated to the AMMS in advance of the teleconference, and were made available to the public via the CASAC website ([www.epa.gov/casac](http://www.epa.gov/casac)) on or through the following CASAC AMMS PAMS July 18, 2011 teleconference webpage:  
<http://yosemite.epa.gov/sab/sabproduct.nsf/bf498bd32a1c7fdf85257242006dd6cb/001ebec35a29e6d5852578be005fc20f!OpenDocument&Date=2011-07-18>

### **Teleconference Summary**

The teleconference was announced in the Federal Register<sup>1</sup> and proceeded according to the teleconference agenda<sup>2</sup>. A summary of the teleconference follows.

### **May 16, 2011**

#### **Opening Statements and Welcome**

Mr. Ed Hanlon, the Designated Federal Officer (DFO), opened the teleconference, and made a brief opening statement noting that the AMMS is a Federal Advisory Committee under the Federal Advisory Committee Act (FACA). He noted the teleconference was open to the public and that teleconference materials were posted onto the teleconference website. He stated that on July 5, 2011, the Panel received a draft CASAC Report on "*Review of EPA's Photochemical Assessment Monitoring Stations (PAMS) Network Re-engineering Project*" for review. He noted that this draft Report was the subject of discussion for the teleconference, and incorporated key points made by the AMMS Panel during and after the May 16-17, 2011 AMMS Panel public teleconferences. He stated that on July 5, 2011, the draft CASAC PAMS Review Report was posted onto the 7/18/11 CASAC teleconference website. He stated that no members of the public had requested to present an oral statement during the 7/18/11 teleconference, and that no sets of written public comments for the 7/18/11 teleconference were received. He noted that the SAB Staff Office has determined that there are no conflict-of-interest or appearance of a lack of impartiality issues for any of the AMMS Panel members for this review. He noted that minutes of the teleconference were being taken to summarize discussions and action items in accordance with requirements under FACA. He then turned the teleconference call over to the Chair, Mr. George Allen.

Mr. Allen welcomed everyone and noted that this is an Advisory effort where a report seeking consensus would be prepared. He then reviewed the agenda. Mr. Allen stated that the 7/5/11 draft CASAC PAMS Review Report would be revised after the teleconference and include the consensus position of the Panel and separate individual comments associated with this review. Mr. Allen noted he would start discussion on the Panel's detailed comments to the draft report's responses to each Charge Question, and then discuss the Panel's comments on the draft report's letter to the Administrator.

## **EPA Remarks**

Mr. Kevin Cavender, EPA Office of Air Quality Planning and Standards, made a brief opening statement. He noted that the 7/5/11 draft CASAC PAMS Review Report's response to charge question #20 indicated the Panel's recommendation that EPA not pursue use of ceilometers for upper air profiling. Mr. Cavender noted that EPA is required to monitor the upper boundary layer, and that if EPA stopped measurements using wind profilers, EPA would not be able to gather this required information.

## **Discussion of Draft Responses to Charge Questions**

Mr. Allen requested comments on the 7/5/11 draft CASAC PAMS Review Report's responses to charge questions.

### **Charge Question 1 – Prioritization of Current PAMS Objectives**

Mr. Allen requested comments on the Charge Question 1 draft response and the Panel had no changes to recommend.

### **Charge Question 2 – Additional PAMS Objectives**

Mr. Allen requested comments on the Charge Question 2 draft response and the Panel had no changes to recommend.

### **Charge Question 3 - Advantages and Disadvantages of Current PAMS Design with Multiple Sites per PAMS Area**

A Panel member requested certain wording changes regarding the discussion on air quality management districts. After discussion, the Panel agreed to change the draft response.

### **Charge Question 4 – Consideration of PAMS Measurements in Other Areas**

Mr. Allen requested comments on the Charge Question 4 draft response and the Panel had no changes to recommend.

### **Charge Question 5 – Consideration of A New Subset of Ozone Sites**

A Panel member requested certain wording changes regarding the CASAC advice related to resources available for adding regional PAMS sites. After discussion, the Panel agreed to change the draft response.

### **Charge Question 6 – Role of Mobile or Temporary Sites**

Mr. Allen requested comments on the Charge Question 6 draft response and the Panel had no changes to recommend.

### **Charge Question 7 – Merits of Revising PAMS to be Very Flexible vs. Highly Specified**

A Panel member discussed possible concerns regarding the draft letter text associated with

Regional Planning Organizations. After discussion, the Panel agreed not to change the draft response.

### **Charge Question 8 – Retain or Revise Current PAMS Monitoring Season Framework**

Mr. Allen requested comments on the Charge Question 8 draft response and the Panel had no changes to recommend.

### **Charge Question 9 - Criteria for Re-Evaluating PAMS Target VOC List**

The Panel discussed the relative priority of parameters noted within the Panel's recommendations for the PAMS Target VOC List. The Panel requested clarification on whether EPA sought priorities at a national scale. Mr. Cavender responded that EPA sought information on the PAMS Target VOC List that may be useful for the entire PAMS program.

One Panel member suggested that the highest priority should be towards chemicals where the correct source mixture is known, and the second highest priority should be towards sources for organic aerosol formation. Another Panel member suggested that VOC reactivity and ozone forming potential be separated. The Panel agreed to move VOC species that are markers of emission sources to be at the top of the PAMS Target VOC List.

The Panel discussed and agreed to consider secondary organic aerosol (SOA) forming potential as a secondary objective for PAMS monitoring. The Panel noted that two issues were not considered primary objectives of PAMS (SOA and air toxics), and asked whether EPA sought advice on secondary objectives. Mr. Cavender responded that EPA did seek advice on such secondary objectives.

A Panel member requested certain wording changes regarding the CASAC advice related to ozone forming potential. After discussion, the Panel agreed to change the draft response.

### **Charge Question 10 - Specific Compounds to be Added to or Subtracted from PAMS Target VOC List**

The Panel members discussed and agreed to add ethanol to the list of target VOCs to be measured under PAMS.

### **Charge Question 11 - Advantages and Disadvantages of Manual Canister Sampling vs. Field Deployed Auto-GCs**

The Panel members discussed making certain wording changes regarding auto-GC advantages and disadvantages which were incorporated into the report.

### **Charge Question 12 - Appropriateness and Suitability of New Commercially Available Auto-GCs at PAMS Sites**

The Panel discussed and agreed to include a sentence advising EPA to assess the capabilities of new Auto-GCs for measuring oxygenated VOCs. The Panel noted that collocation of canisters with new auto-GCs is recommended. The Panel members also discussed making certain wording changes regarding specific commercially available auto-GCs; these changes were incorporated into the report.

### **Charge Question 13 – Role, if any, of TNMH Monitors in PAMS program**

Mr. Allen requested comments on the Charge Question 13 draft response and the Panel had no changes to recommend.

### **Charge Question 14 –Carbonyls at VOC Speciation Sites**

Mr. Allen requested comments on the Charge Question 14 draft response and the Panel had no changes to recommend.

### **Charge Question 15 – Issues with the Current TO-11A Method for Carbonyl Sampling**

The Panel discussed the prevalence of use of DNPH cartridges with ozone scrubbers, and noted that maintenance requirements for scrubbers has varied from state to state. The Panel members discussed making certain wording changes regarding the use of an ozone scrubber that is used with the DNPH cartridge, which were incorporated into the report.

### **Charge Question 16 – Alternative Methods to the manual TO-11A Method for Carbonyl Sampling**

Mr. Allen requested comments on the Charge Question 16 draft response and the Panel had no changes to recommend.

### **Charge Question 17 – Suitability of Direct Measurement NO<sub>2</sub> or Photolytic NO<sub>2</sub> Analyzers For Deployment in PAMS Network**

The Panel discussed that there was an overabundance of references in this response to charge question 17. A Panel member agreed to review the text and revise the text to incorporate only two or three citations in sections that incorporated references. The Panel members also discussed making certain wording changes regarding measurement of NO<sub>2</sub> by FRM monitors, measurement using photolytic and cavity ringdown systems, and development of standard operating procedures for measurement of NO<sub>2</sub>. These changes were incorporated into the report.

### **Charge Question 18 – Observational Approaches to Gather Ozone and Nitrogen Oxide Profile Information**

One Panel member agreed to send revised language after the call to the DFO with suggested revisions regarding use of satellites for collection of PAMS data. The Panel members also discussed making certain wording changes regarding the use of ceilometers which were incorporated into the report.

### **Charge Question 19 – Collection of Upper Air Wind Speed and Wind Direction Data at PAMS Sites**

The Panel members discussed making certain wording changes regarding the advice associated with use of upper air wind data from NOAA and elsewhere to support modeling efforts, and regarding alternatives to the RASS/Profiler upper air instruments for PAMS. These changes were incorporated into the report.

## **Charge Question 20 – Incorporation of NOAA Data Into the PAMS Program**

The Panel discussed whether the Clean Air Act or EPA regulations required that upper air data (temperature and wind) be collected in PAMS areas. Mr. Cavender responded that the Clean Air Act and EPA regulations did not require that EPA use NOAA's upper air data to support EPA's PAMS program. The Panel members discussed making certain wording changes regarding the use of ceilometers which were incorporated into the report.

## **Charge Question 21 – Use and Analysis of PAMS Data**

A Panel member suggested adding additional text to provide advice on standard temporal analyses that should be performed at all PAMS sites. The Panel member also suggested additional advice on suggested combinations of PAMS data with meteorological data, and on how to identify the general direction transported sources of pollutants. The Panel member further suggested adding additional advice that EPA should focus data analysis on trending, accountability analyses for emission reduction programs, and evaluation of air quality models. The suggested revisions were read to the Panel, who discussed the suggested revisions and agreed to incorporate the language with a few revisions to the suggested wording.

Another Panel member commented that EPA's analysis of PAMS data should consider the original, preconceived notions for PAMS network design, noting that differences between upwind, downwind, and other directions have changed. The Panel member commented that PAMS models from the 1990's predicted significant ozone benefits in urban cores, and recommended that EPA assess whether these benefits have been detected.

## **Charge Question 22 – Implementation of Recommended Data Analyses at the State, Regional, and National Level**

The Panel discussed and agreed to clarify the source of PAMS funds within the response, and to remove the advice that recommended that data analysis at the national level focus on trending, accountability analyses for emission reduction programs, and integration with air quality modeling. Several other wording changes were incorporated.

## **Charge Question 23 - PAMS Funding Allocation towards Data Analysis**

One Panel member recommended that a typographical correction be made to a sentence within the response, which was incorporated.

Mr. Allen then led a discussion on the Panel's comments on the draft report's letter to the Administrator. Several Panel members recommended that the letter to the Administrator be significantly shortened, and that the top three or so issues be identified and focused on. Several suggestions were made to adjust the text to shorten the text, which were agreed upon by the Panel.

After hearing no additional comments, Mr. Allen then discussed next steps and action items. He noted that the Panel identified consensus language for changes to the draft cover letter and body of the draft CASAC report, and that a few Panel members agreed to provide the DFO with revised draft language or references that would be added to certain sections of the body of the draft CASAC report after the teleconference.

Mr. Allen then noted that he and the DFO would incorporate those edits into a revised draft Report that would be sent to the chartered CASAC for quality review and approval. He noted that the revised draft Report would be publicly available for review when posted onto the CASAC Quality Review teleconference call website once that teleconference call was scheduled and the website made active. He asked if Panel members agreed to send the draft report as revised per discussion on the teleconference to the chartered CASAC for quality review and approval. There were no objections from the Panel to send the draft report as revised to the chartered CASAC for quality review and approval.

Mr. Allen asked if the Panel members had any additional questions. Hearing none, he thanked the Panel members and EPA staff who participated on the teleconference. With the teleconference business concluded, the Designated Federal Officer adjourned the teleconference at 4:00 pm ET.

Respectfully Submitted:

*/signed/*

---

Mr. Edward Hanlon  
Designated Federal Officer

Certified as Accurate:

*/signed/*

---

Mr. George Allen, Chair  
CASAC Air Monitoring and  
Methods Subcommittee

NOTE AND DISCLAIMER: The minutes of this public teleconference reflect diverse ideas and suggestions offered by Panel members during the course of deliberations within the teleconference. Such ideas, suggestions and deliberations do not necessarily reflect consensus advice from the Panel members. The reader is cautioned to not rely on the minutes to represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters or reports prepared and transmitted to the EPA Administrator following the public meetings or teleconferences.

## Materials Cited

The following meeting materials are available on the CASAC website ([www.epa.gov/casac](http://www.epa.gov/casac)) on or through the following CASAC AMMS PAMS July 18, 2011 teleconference webpage: <http://yosemite.epa.gov/sab/sabproduct.nsf/bf498bd32a1c7fdf85257242006dd6cb/001ebec35a29e6d5852578be005fc20f!OpenDocument&Date=2011-07-18>

<sup>1</sup> Federal Register Notice announcing the teleconference

<sup>2</sup> Agenda for July 18, 2011 public teleconference

## **ATTACHMENT A – ROSTER**

### **U.S. Environmental Protection Agency Clean Air Scientific Advisory Committee CASAC Air Monitoring and Methods Subcommittee (AMMS)**

#### **CHAIR**

**Mr. George A. Allen**, Senior Scientist, Northeast States for Coordinated Air Use Management (NESCAUM), Boston, MA

#### **MEMBERS OF AMMS**

**Dr. David T. Allen**, Professor, Department of Chemical Engineering, University of Texas, Austin, TX

**Dr. Linda Bonanno**, Research Scientist, Office of Science/Division of Air Quality, New Jersey Department of Environmental Protection, Trenton, NJ

**Dr. Doug Burns**, Research Hydrologist, U.S. Geological Survey

**Dr. Judith Chow**, Research Professor, Desert Research Institute, Air Resources Laboratory, University of Nevada, Reno, NV

**Dr. Kenneth Demerjian**, Professor and Director, Atmospheric Sciences Research Center, State University of New York, Albany, NY

**Mr. Eric Edgerton**, President, Atmospheric Research & Analysis, Inc., Cary, NC

**Mr. Henry (Dirk) Felton**, Research Scientist, Division of Air Resources, Bureau of Air Quality Surveillance, New York State Department of Environmental Conservation, Albany, NY

**Dr. Philip Fine**, Atmospheric Measurements Manager, South Coast Air Quality Management District, Diamond Bar, CA

**Dr. Philip Hopke**, Bayard D. Clarkson Distinguished Professor, Department of Chemical and Biomolecular Engineering, Clarkson University, Potsdam, NY

**Dr. Rudolf Husar**, Professor, Mechanical Engineering, Engineering and Applied Science, Washington University, St. Louis, MO

**Dr. Daniel Jacob**, Professor, Atmospheric Sciences, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA

**Dr. Peter H. McMurry**, Professor, Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN

**Dr. Allen Robinson**, Professor, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA

**Dr. Armistead (Ted) Russell**, Professor, Department of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA

**Dr. James Jay Schauer**, Professor , Department of Civil and Environmental Engineering, College of Engineering, University of Wisconsin - Madison, Madison, WI

**Dr. Jay Turner**, Associate Professor, Environmental & Chemical Engineering, Campus Box 1180, Washington University, St Louis, MO

**Dr. Yousheng Zeng**, Managing Partner, Providence Engineering & Environmental Group LLC, Baton Rouge, LA

#### **SCIENCE ADVISORY BOARD STAFF**

**Mr. Edward Hanlon**, Designated Federal Officer, U.S. Environmental Protection Agency, Washington, DC

## **ATTACHMENT B – Other Attendees**

### **List of Members of the Public Who Requested Information for Calling into the Public Teleconferences of the EPA Clean Air Scientific Advisory Committee Air Monitoring and Methods Subcommittee (AMMS) for the Review of EPA's Photochemical Assessment Monitoring Stations (PAMS) Program**

**July 18, 2011**

<b>Name</b>	<b>Affiliation</b>
Dinh, James D.	State of Virginia Department of Environmental Quality
Downs, Tom	Maine Department of Environmental Protection
Elmi, Amal	Capitol Associates Inc.
Kebscull, Kurt	State of Connecticut Department of Energy and Environmental Protection
Kwong, Jenette	California Air Resource Board
Ollison, Will	American Petroleum Institute
Parker, Stuart	Inside Washington Publishers
Steger, Joette	State of North Carolina Department of Environment and Natural Resources
Tracy, Ryan	Dow Jones Newswires